

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL ☒ DEEPEN ☐ PLUG BACK ☐NAME OF COMPANY OR OPERATOR DNR - GEOL SURVEY DATE 1 March 77PO Box 250RollaMO

Address

City

State

DESCRIPTION OF WELL AND LEASE

Name of lease

ERDA TS

Well number

15

Elevation (ground)

990

WELL LOCATION

(give footage from section lines)

60 ft. from NE sec. line 15 ft. from (E) 15 sec. line

WELL LOCATION

Section STownship 31NRange 31W

County

BARTONNearest distance from proposed location
to property or lease line:NA feetDistance from proposed location to nearest drilling,
completed or applied - for well on the same lease:NA feet

Proposed depth:

200

Rotary or Cable tools

Rotary

Approx. date work will start

1 March

Number of acres in lease:

NANumber of wells on lease, including this well,
completed in or drilling to this reservoir:NA

Number of abandoned wells on lease:

NAIf lease, purchased with one or more
wells drilled, from whom purchased:

Name _____

Address _____

No. of Wells: producing _____

inactive NA

abandoned _____

Status of Bond

Single Well ☐ Amt. _____Blanket Bond ☐ Amt. _____☐ ON FILE
☐ ATTACHEDRemarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present
producing zone and expected new producing zone) use back of form if needed.

Proposed casing program:

amt.

size

wt./ft.

cem.

NONE

Approved casing - To be filled in by State Geologist

amt.

size

wt./ft.

cem.

I, the undersigned, state that I am the _____ of the _____ (company),
and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and
that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature _____

Permit Number: 20017Approval Date: 1 March '77Approved By: Wallace B. HaysNote: This Permit not transferable to any other
person or to any other location.Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250 Rolla, Mo. 65401

One will be returned.

☒ SAMPLES REQUIRED☐ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED @:

MISSOURI OIL AND GAS COUNCIL
WELL LOCATION PLAT

Form OGC - 4

Owner: DNR - GEOL SURVEY

Lease Name: ERDA TS No. 15 County, BARTON

60 feet from (N) - 1 line and 15 feet from (E) - 1 line of Sec. 5 Twp. 31N Range 31W

SCALE
1" = 1000'

REMARKS: _____

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest lease and section lines, and from the nearest well on the same lease completed in or drilling to the same reservoir. If the location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well. Do not confuse survey lines with lease lines. See rule 7 - 3 (b) for survey requirements.

(SEAL)

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P.O. Box 250 Rolla, Mo. 65401
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Registered Land Surveyor

TEST BORING LOG

Project E.R.D.A. T.S.
D.N.R. Geological Survey
 Address Barton County
 City & State Rolla, Missouri

Boring No. 15 Sheet 1 of 2
 Surface Elevation _____ Offset _____
 Date Started 3/4/77 Completed 3/3/77
 Driller J. Wright Rig 750 ATV

Abbreviations: A.O. - Auger Only R.B. - Rock Bit C.W. - Core Water
 H.A. - Hollow Auger S.S. - Split Spoon C.A. - Core Air
 W.B. - Wash Bore S.T. - Shelby Tube F.B. - Finger Bit

Sec. 5, T. 31N., R. 31W.

DEPTH		METHOD	PENETRATION RECORD		CORE RECOVERY	SAMPLE DESCRIPTION COLOR-MATERIAL-MOISTURE-CLAY CONSISTENCY SAND DENSITY
FROM	TO		POCKET PENETRO-METER	NO. OF BLOWS		
0.0'	11.0'	WB			Soil,	clay, red
11.0'	16.0'	CW1			5.8	Sandstone, gray-brown
16.8'	21.5'	CW2			4.3	Sandstone
21.5'	30.0'	CW3			9	Same
30.0'	40.0'	CW4			6.3	Sandstone, gray
40.0'	50.0'	CW5			9.5	Sandstone, gray
50.0'	60.0'	CW6			10	Sandstone, gray, coal
60.0'	70.0'	CW7			10	Shale, black
70.0'	80.0'	CW8			9.6	Shale, black
80.0'	90.0'	CW9			7.8	Shale, dark gray
90.0'	100.0'	CW10			10	Siltstone, gray, sandy
100.0'	107.4'	CW11			7.4	Sandstone
107.4'	110.0'	CW12			2.2	Same
110.0'	120.0'	CW13			10	Same
120.0'	130.0'	CW14			10	Sandstone, gray
130.0'	140.0'	CW15			10	Sandstone, w/silt lenses

REMARKS: (Casing, Water Loss, Etc.)

Water Level

Time

Date

(Completion)

TEST BORING LOG

Project	E.R.D.A.	T.S.
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Boring No. 15 Sheet 2 of 2

D.N.R. Geological Survey

Surface Elevation _____ Offset _____

Address Barton County

Date Started 3/3/77 Completed 3/3/77

City & State Rolla, Missouri

Driller J. Wright Rig 750 ATV

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[illegible]

REMARKS: (Casing, Water Loss, Etc.)

Water Level

Time

Date _____



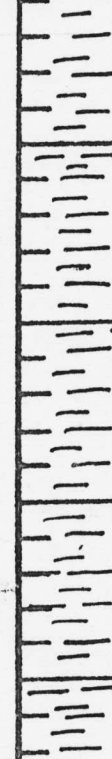

(Completion)

Layne-Western Company, Inc.

QUADRANGLE: Lamar South

ERDA-TS core hole 15
COUNTY: Barton

LOCATION: NE1/4 NE1/4 NE1/4 SEC. 5 T. 31N R. 31W				DATE: March 1-3, 1977
LOCATION DESCRIPTION: 60' FNL and 15' FEL; 3-1/2 miles west and 1-1/2 miles south of Lamar, Mo.; along east side of state road Z surface elev. 990.0; T.D. 190.0				
DEPTH (FEET)	BED NO.	LITHOLOGY		
0.0	11.0	1	no core	
11.0	50.0	2	ss., brown; iron stained to 12.0 ft., with iron stained zones to 17.0 ft.; med. gray (wet); salt and pepper appearance, cross-bedded, micaceous; laminae of carbonaceous, plant material and mica 21.5 to 22.0 ft.; grain size coarsens below 26.5 ft to 1/2 mm. dia.; some weathered feldspar grains; slight oil staining 24.6 to 25.2 ft and below 26.5 ft; sporadic clasts of gray shale and fusain below 42.0 ft becoming more abundant at bottom. Microscopic examination at 48.0 ft - fair sorting (4 Wentworth grade sizes) grains silt sized to 1/2 mm dia, sparse blotches of asphalt; grains sub-angular to subrounded, felspathic; 3.7 ft core loss between 35.0-40, lost core 48.6-50.0 ft.	

50.0	50.2	3	congl., clasts of fusain and tan and brown plant material; lt. gray, ss. matrix	3	
50.2	60.9	4	ss, lt. gray (dry) to med. gray (wet); grain size 1/16 to 1/4 mm. dia. to 1/4 mm. in bottom 4.0 ft.; cross-bedded, "bundles" of irregular, inclined carbonaceous laminae at 51.3 to 51.7 ft., 52.5 to 52.8 ft., 56.1 to 56.3 ft. (horizontal), 56.4 to 56.7 ft. (carbonaceous laminae occur as bits of charcoal, twigs form continuous laminae, micaceous). conglomeratic in bottom .5 ft. with clasts of coal, gray shale, pyritiferous	4	
60.9	82.4	5	shale, med. gray, slickensided; high angle fracture; non calc.	5	
82.4	90.0	6	shale, med. dk gray; top .6 ft intercalated with wavy lt. gray ss. laminae, some clasts of gray shale, coal; pyritiferous; lt. gray, inclined; 2.2 core loss between 80.0 and 90.0 ft; possibly an underclay at 86.0 ft.; lt. gray, lenticular ss. laminae, steeply inclined; micro-faulted from 87.0 to 88.0 ft	6	

90.0 182.8

7

ss., lt. gray, fine-grained; about 10% of unit is wavy horizontal "bundles" to .1 ft thick, evenly spaced of micaceous coal laminae to 129.0 ft; mostly ss. 117.8 \rightarrow 126.2 ft; dk gray shale lenses 90.1 \rightarrow 90.2, 93.0 \rightarrow 93.2, 96.3 \rightarrow 96.9, 105.5 \rightarrow 106.0, 114.5 \rightarrow 114.7, 116.2 \rightarrow 116.4; lost core 109.6 \rightarrow 110.0 ft.; about 50% shale with interlaminated lt. gray ss. ripples from 129.0 \rightarrow 130.5; predom. ss 130.5 \rightarrow 133.0, interbedded dk. gray shale and lt. gray ss. ripples 133.0 \rightarrow 138.4 ft; predom. ss 138.4 \rightarrow 144.0, 30% of unit dk. gray shale laminae 144.0 \rightarrow 149.0, predom. ss. 149.0 \rightarrow 150.0 ft, about 20% dk gray wavy shale laminae to .05 ft. thick from 150.0 \rightarrow 170.0 ft.; about equal amounts of interlaminated lt. gray ss ripples, with some pods, and dk. gray shale 170.0 \rightarrow 182.8 ft.

7

182.8 184.0

8

chert; top .3 ft dk. gray grading downsection into lt. gray fractured chert; argillaceous, pyritiferous ss. bed .2 ft thick about .5 ft. from top

184.0 190.0

9

ls, lt. gray, coarsely crystalline, stylolitic; coarsely ribbed spirifer? fragments; vugs near middle filled with heavy oil

T.D. 190.0 ft

7

8

TOP M

WILDCAT

STATE	FR & COMP MISSOURI	8-3-84	MAP NO.	S-T-R	5-31N-31W	S
OPER	MISSOURI GEOL SURVEY			SPOT	APP NE NE NE	INIT
	P O BOX 250, ROLLA, MO			CO	BARTON	S
WELL	15 ERDA-TS			ELEV	990 GR	FIN
CONTR	LAYNE WESTERN			60' fml, 15' fel of Sec		
FIELD	WC					
IP	D&A					
	API 24-011-20017					

SPUD 3-1-77, no surf csg

RTD 190, log

D&A FIRST REPORTED AND COMPLETED 3-2-77

GR SPL TOPS:

MISS LM 184 + 806

RTD 190 + 800

TD IN MISS

COMP ISSUED 8-15-77

OK



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